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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/735,668	12/20/2000	Rodolfo I. Gamboa	TI-29518	5377

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EXAMINER

FARAHANI, DANA

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 01/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/735,668

Applicant(s)

GAMBOA, RODOLFO I.

Examiner

Dana Farahani

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. New formal drawings are required in this application because the drawings are not suitable for reproduction. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 19 is objected to because of the following informalities: on first line, "claim 17" should be "claim 18". Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 4, 7-8, 11-13, and 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moyer et al. (U.S. 4,803,540) in view of Shibata (U.S. 6,229,199) and further in view of Brown (U.S. 6,148,673) and further in view of Wark et al. (U.S. 5,929,521) and further in view of Haehn et al. (U.S. 6,261,870).

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Regarding claims 1, 18, 19, 21 and 22, Moyer discloses, figures 2-5, a guidepost (deformation absorbing member) 11 on a frame for mounting a semiconductor chip. Moyer does not disclose a chamfered impact base, a floating base, pogo-pins, and a removable back panel. Shibata discloses, figure 1B, a chamfered impact base 12c extending from pin 13a at a small angle in order to reduce stress concentration (see column 2, line 44). Brown discloses, figure 1, a pressure sensor with a floating flag 14 coming into contact with the semiconductor device 30 to alleviate pressure from the device (see column 4, lines 23-46). Wark discloses, figure 12, contact structures 510 having a cylindrical chamber and a crown top, as can be seen in figure 7B, in order to make a safe contact to a surface 178 (see column 3, lines 44-50). Although Wark does not disclose crown tops at both ends, it would have been obvious to one of ordinary skill in the art at the time of the invention to include the crown top at the other end so other devices could also be attached to the surface. Haehn discloses in abstract a circuit package that have a back panel for exposing the backside of the package. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a chamfered impact base, a floating base, pogo-pins, and a removable back panel in Moyer structure to reduce stress concentration, alleviate pressure, make a safe contact, and expose the back side of the device, respectively.

Regarding claim 3, Moyer discloses, column 2, lines 49-55, the deformation-absorbing member 11 could be circular or other shapes such as oval. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to make the deformation-absorbing member 11 as a rectangle and a triangular shape in

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order to be able to fit the package to the desired shape of a semiconductor device to be attached to the package.

Regarding claim 7, it would have been obvious to one of ordinary skill in the art at the time of the invention to include holes in the back panel to receive the pins.

Regarding claim 8, it would have been obvious to one of ordinary skill in the art at the time of the invention to use screws to attach the back panel to the body.

Regarding claims 11-13, Wark, as applied to Moyer, discloses gold being used to form the bumps on the die (see column2, lines 5-6). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use gold in the pins structure to benefit from the properties associated with this material.

Regarding claim 15, Moyer discloses, figure 3, the guidepost 11 includes a groove.

Regarding claim 16, Wark, as applied to Moyer, discloses, figure 6B, the crown of the pin has four pointed ends (152 and 154) and a series of crevices. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use such a structure to make the proper contact with the semiconductor device.

Regarding claims 4, 17 and 20, Moyer in view of Shibata and further in view of Brown and further in view of Wark and further in view of Haehn discloses the claimed invention except the values the applicant has disclosed. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include these values, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

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5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moyer in view of Shibata and further in view of Brown and further in view of Wark and further in view of Haehn, as applied to claim 1 above, and further in view of Kim et al. (U.S. 5,939,776).

Moyer does not disclose the semiconductor device is a Quad Flat Pack (QFP). Kim discloses, column 1, line 30-32, that pressure-causing damage to the leads of a semiconductor package is more critical to a QFP since it has a thinner thickness. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the test socket in a QFP in order to prevent the leads from being damaged.

6. Claims 5, 6, 9, 10, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moyer in view of Shibata and further in view of Brown and further in view of Wark and further in view of Haehn, as applied to claim 1 above, and further in view of Yerman et al. (U.S. 4,716,124).

Regarding claims 5 and 6, Moyer does not disclose a spring with a base component and a cylindrical shaft. Yerman discloses, figures 9 and 10, spring 146 with a square base and a cylindrical shaft underneath to receive the spring. Furthermore, Yerman discloses, column 5, lines 26-33, that the spring needs to provide a resilient force, exceeding 10 pounds per square inch. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use steel alloy and plastic base so the spring structure can provide a resilient force and the socket can be attached to other devices.

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Regarding claim 14, Yerman, as applied to Moyer, discloses, figure 12, sets of two pins is provided for contacting a semiconductor device. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use such a structure in order to make contact with a semiconductor device.

Regarding claims 9 and 10, Yerman, as applied to Moyer, discloses the spring 146 in figures 9 and 10 is used as a mean to press contacts 142 and 144 (see column 5, lines 31-33). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to dispose springs in the pins as a mean of making contact of the pins to other surfaces.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dana Farahani whose telephone number is (703)305-1914. The examiner can normally be reached on M-F 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (703)306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7722 for regular communications and (703)308-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.